

A new, cheape and
delicate Fire of Cole-balles, wherein
Seacole is by the mixture of other com-
busible bodies, both sweetened
and multiplied.

Also a speedie way for the winning of any Breach:
with some other new and seruiceable In-
uentions answerable to
the time.

Regium est cum feceris bene, audire male.
S. Ha.



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at the signe of the Starre on Bredstreet-hill.

1603.

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TO THE CVRTEOVS AND
well disposed Reader.

BEing euerie way willing,
though no waie able, out
of my manie and manifold
trauels to bring foorth
some substantial and com-
modious inuention for
the auoiding of idlenesse, and relieuing the
present misery, which the fortune of warres,
together with the want of profitable labors
hath brought vpon vs: I could not (on the
sodaine) bethinke my selfe of a better dis-
couerie, then how to imploy the poore and
mained persons of this land, who (hauing
their hands only) might be sufficiently able
to worke vp these sweet and profitable fire-
balles, for the benefit and pleasure of the
rich. And as I haue alreadie in my booke of
Remedies against famine, freely and plainly
deliuered, sundrie new and cheape kinds

A 3 . both

THE EPISTLE

both of meate and drinke to bee vsed in a dearth of victuall; so if now in the scarcitie of fewel I may also proue so happy, as to bring forth a cheape and sauing fire to warme and cherish their cold and frozen limmes, with the recompence of their labours, I shall bee greatlie encouraged to deuote and consecrate the fruits of some of my intermissiue houres vpon these and such like charitable and godly vses. But without all question if the rare and excellent spirits of this land, might haue their best inuentions by some act of Parliament priuiledged to theselues for some reasonable time, with some proportionable part of the gaines referued for the succour of the poore (a matter well moued of late, but crossed and swallowed vp, I know not how in the bare and naked word of *Monopolies*) I would not doubt, but though *priuatum commodum* be the first mouer in euerie Artifts intention (as it is in all manuall and mechanicall trades) yet that *bonum publicum* would also follow and flow abundantly in the execution and publication of such ingenious deuises: out of which maine root manie large and plentifull branches

DEDICATORIE.

ches of gainfull imploiments, for idle and vagrant persons, were by all probable consequence likely to arise and spring.

In the meane time whilest these long deserved fauours doe yet remaine rather to bee wished of all then hoped of anie, I haue thought good to kindle such a fire, as I hope ere long will blaze in his full brightnesse, both in the halles and chambers of diuers Noble men and Gentlemen of this land, who finding the great difference betweene their former fires of sea-cole, and this newe and sweete composition, both themselues, and by their example also manie other persons of inferiour qualitie, will bee readie as well for their owne good, as for the reliefe of their poore and distressed neighbours (which almost in euerie place of this land are readie euen with teares & prayers to craue either charitie, or employment toward the maintenance of themselues and their poore families) to giue all the best furtherance which they may, and that with all speedie and diligent expedition.

And so hauing satisfied your long and
car-

THE EPISTLE.

earnest expectation in this my new conceited fire, I hope you will afford me the recompence which I am to require at your hands, which is nothing els but *veniam pro munere posco.*

H. Plat Esquier.

Seacole sweetened and *multiplied.*

BEfore I disclose the matter and maner in this new composition of Cole-balles, I thinke it verie necessarie, first (in the behalfe of those poore and miserable wretches, for whose good I do principally intend this Treatise) to intreat all such Magistrates, vnto whom the care and prouision of fewell doth any way appertaine, that they so farre forth, as either their authoritie, skill, or trauell may giue anie furtherance hereunto; would be verie prouident and careful not to suffer anie seacoles to be sold or landed at anie wharfe or key, vnlesse the same by good experience shall be found to be of the best mines: or at the least of such kind and qualitie as will cake and knit together, and so make a hot and durable fire. For the better performance wherof, I hold it the plainest and most euident triall of all other, first to cause a conuenient fire to be made of some parcell of the coles of euerie ship, before the owner be suffered to vnlade, with a speciall charge giuen, that if the whole bulke do not fall out to be of the selfe same and equall goodnesse with the sample, that the rest should either be returned or confiscated, if any law or custome of that place will beare it. For herein I my selfe haue beene a feeling witness, who at the first (not hauing any skill in the choice of my coles) haue sometimes bought such, as I haue beene forced euen freely to giue to those which could make any vse of them,

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Sea-cole sweetened,

at which time no doubt many poore & vnskilfull men did likewise to their great hinderance, and some of the almost to their vtter vndoing, make a most miserable prouision for theselues & their poore wiues and childre. And if happily the Magistrat shal either grow negligent, or deale corruptly herein, then do I aduise euerie man to make the like triall for himself. And because I will no way be wanting in good will to the furtherance of so generall a commoditie as I haue now in hand, I will here set dowe some few examinations of mine owne, which may happily serue for the instruction of all such buyers, as haue no better experience then mine to direct them.

First I do hold it an infallible rule to know a good cole by, viz. if the same being held ouer a candle, or rather ouer a flaming fire, do melt, & as it were drop or frie: for this is an argument of his fattie and sulphurous nature, which ministreth store of foode for the fire; but if the same grow hard & drie ouer the flame, it is a signe of a leane and hungrie cole, and such as will not cake or knit in the burning: of which kind are the *Sunderland* coles, whereof the poores wharfe in London can giue a sufficient testimonie; which haue lien one winter already without anie great decrease, sauing that some parcell thereof hath rather beene translated to another place, to make the bulke seeme lesse, then sold and distributed amongst the poore, for whom that charitable prouision was first meant. Here xviii. pence or fise grotes in the price of a chaldron was ill saued.

Secondly, the brightnesse and glistering of the cole both within & without, is some argument of his goodness (although I haue heard that some kind of bad sea-cole

and multiplied.

cole, newly digged out of the mine, and brought drie in sommer time, will both shew and breake faire) but most commonly if it breake in the colour and lustre of pitch, it proueth a good cole to the buier: but without all question, if the same be of a darke, duskish, and dead earthly colour, it is vterly vnprofitable for him that shal spend it.

The last and most assured prooue of all the rest (except the making of a fire with them, wherein no man of any sense can easily be deceiued) is the lightnesse of the coles in weight. This weight, as in manie other bodies, so especially in water, doth argue either his purenes, or his impuritie: for the lighter & clearer water, is euer held the better & more wholsom, as least participating with earth or minerals. Now if you haue but halfe a peck of the best & lightest coles, finely powdered alwayes remaining by you, with this you may examine the goodnesse of any other cole, and by how manie degrees it differeth from the same, (the lightest coles being alwayes the best) the neerer your cole commeth in lightnesse to the patterne, (both being equally measured, & brought to fine powder) you may assure your selfe that it is so much the better; and the more that the same measure of any other coles exceedeth the other in weight, so much the more earthie & worse burning cole you shal find it. And thus much concerning the goodnes of the cole, wherein if the buyer happen to faile, then shall he labour in vaine, either to sweeten, or multiply the same; the seacole it selfe being the *basis* & foundation of the whole work, which must giue both strength and substance to the bals. And because it is not impertinent to the subiect which wee haue in hand, to know the places of our

Seacole sweetened,

best mines already discovered, &c. I have thought good heere to name the principall places or mines, from whence the best seacole is brought, *viz. Durham, Blaidon, Stillow, Redhew, and Bourne*; the rest being ten or eleuen more, are of a worse kind, and the worst of all are those of *Sunderland*. I would the owners of these pits or mines, would deale simply & truly with vs: for by the report of many, that are acquainted with their practises, there is such a medley made of these mines, as no man can tell which is the predominant cole in the whole bulke.

I have here also a fit occasion offered me to moue the right Honorable the Lord Maior of the Citie of London, and the right worshipfull the Aldermen his brethren, that if this new fire of mine proue a substantial and profitable inuention, according to that shewe and countenance which (*prima facie*) it seemeth to carie, that they would immediately vpon good prooffe thereof, gather vp all the idle and vagrant persons, & all the maimed & vnpenfioned souldiers, which (notwithstanding all our new taxations & contributions) do still pester the streets and suburbs of this citie, and imploy them in their profitable labors in that vnprofitable pest house. And that which is here spoken for London, I hope wil also serue for all the houses of correction within this realme, where there shal bee found sufficient store of matter to worke vpon.

The last petition or request which I do here make in the behalfe of the poore, is that at such time as by the slender prouision of the Magistrate, and by an extreme hard, and frostie winter ensuing, whereby great store of seacole is spent (which doth oftentimes happen) that the Magistrats of all places would neuer suffer

and multiplied.

fer or permit the cole it selfe to be sold aboute the rate of three shillings gain vpon the chaldron to any cole-monger, which commonly falleth out (respecting the time of the forbearance of his money) to be at the least 20. or 30. in the hundred, & vpward, if you adde here-vnto that fine in the hundreth, which he gaineth by ouer measure, when he buyeth a whole ships lading in the poole together.

And if vsurie bee so dangerous a trade, as both the word of God and al the ministers therof do daily publish and proclaime vnto vs, the same for the most part being drawne from men of good estate & credit (for the vsurer will seldom trust any other) what shall wee thinke of a double and treble vsurie, nay of a doubling the principall it selfe (whereof there hath beene a miserable & wretched experience of late memorie within this honorable citie of London) & that wrung out euen from the backs and bellies of the poorest sort of people.

I had thought also to haue spoken somewhat for reformation of the cole sacks, which (by the opinion of diuers men) do in drie and wet weather differ greatly from themselves, and by that meanes cannot produce so certaine a measure to the buyer as the bushel or far doth, which is alwayes of one and the selfe same content: but I doubt not (if the allegation be sound) but y^e the wisdom of the Magistrate will soon reforme this fault. But now to mine own part: wherein because no Author of any new inuention (though hauing *Lincius* eyes, or enjoying the piercing spirit of *Mercurie* himselfe) is able truly to foresee all the future effects & accidents that in time may happen to crosse a matter of innouation or noueltie: I do here (expecting nothing

Seacole sweetened,

els but a thankfull acceptance of my painefull and costly labours at your hand, if the secret proue rich and beneficiall to the poore, which is my hope and desire, or els your gentle pardon if it fall out otherwise, which is the least that I can deserue) freely offer and publish the greatest part of my knowledge in this kind, and so I proceede to the composition.

In the winter season after some few frosts, gather so much lome as will serue your house for one whole yeares spending (for then it will crumble and dissolue more easily in water then at other times, although at all times with a little more labour in stirring the same it may be made seruiceable enough for this purpose) half a peck, & happily a lesse proportion of this lome, dissolued in a little tub of water, is a sufficient quantitie for the knitting vp of a bushel of seacole into balles, and your water and lome incorporated and well laboured together must be like a very thin pap.

Then take a bushel of the best seacole, which being strewed vpon a stonie or paved floore, you must breake or bruile with a hammer, mallet, or some other apt toole or instrument, or otherwise you may sufficiently powder them vnder your feete, which I haue found the readiest and cheapest way of all other. This is entended of the greater sort of coles; but if your coles be of the smaller kind, then are they sufficiently prepared for this worke to your hand.

Spread these coles abroad some handfull thicke, or thereabouts, equally vpon the floore, then sprinkle some of your thinne pap all over the heape: then turne them with a shouell or a spade, and spread the againe as before, throwing more of your lomy liquor vpon them. Continue this course till you haue made
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and multiplied.

the whole masse or lumpe of your coles soft enough to be wrought vp into balles, betweene your hands, according to the maner and making of snowbals: then place them one by one, so as they touch not ech other til they be thorough drie, which will be in a few dayes. Then may you pile or lay them vp in heaps in any conuenient place, where they may bee defended from raine, which if it should fall in any great quantitie vpon them, they would be in danger to be dissolved againe. And so you haue seacoles wrought vp into bals simply of themselues, according to the maner of *Lukeland* in Germanie: which forme of firing hath been in vse with them for many yeares past, and doth as yet continue to this day, as I am credibly informed.

Heere happily the workeman may be taxed of a needles and vprofitable labour, in that a conuenient fier may be made of seacoles only according to our vsuall manner without any further charge or labor, and it is an auncient and approoued *Maxime* aswell amongst sound Lawyers as also amongst al good Politicians. *Quod frustra fit per plura quod fieri potest per pauciora.* But to giue some reasonable satisfactiō herein, I do first presume that those frugal & thriftie *Germanians* haue found some good vse of their labours, or els they woulde long since haue discontinued the same. Secondly, I haue found in mine owne experience, that such fiers as consist of bals be neither so offensive in smel, nor yet in soile, as the ordinary seacole fires are. And if experience the vndoubted mother of truth will not serue to satisfie doubtfull wittes in this point, but that they will also call for reason at my hands (*quia turpe est philosopho quidquam sine ratione proferre*)

Seacole sweetened,

proferre) I will giue you my conceit freely either to be controlled or confirmed at your pleasures. And therefore my opinion is, that the smoke which in our visuall fiers dooth immediatly ascend from the seacoles vnprepared, must needs according to the foule and grosse matter of the cole, be also foule and smooty it selfe. But when the smoake doth passe, and become as it were searfed thorough the lome (which is the band that knitteth the coles together) it is then so refined and subtilated before his penetration, as that it either consumeth and swalloweth vp, or els leaueth behinde it the grosse residence of his owne nature, whereby that black kind of pepperinor seacole dust (if I be not greatly deceiued) is either wholly or for the most part auoided: being a matter of so great offense to al the pleasat gardeins of Noblemen, Gentlemen, and Marchants of this most honorable Citie and the suburbes therof, besides the discoloring and defacing of al the stately hangings and other rich furniture of their houses, as also of their costlie and gorgeous apparell, as that I presume though these my charitable and well intended labours should onely produce a remedie for this long and hitherto inauoideable mischiese, that yet they would be receiued with a sufficient applause and liking of all men. Also the stirring vp of common seacole fiers after they are once caked and knit together dooth make a hellishe smoke and smoder, dispersing the smootie substance & subtile *atomies* abroad into the aire, which in a fire of balls doth neuer happen, because after they are once piled in such artificiall manner as is hereafter expressed, they continue a strong and lasting fier without any touch or remouing of them. Besides the beautie
of

and sweetned.

of this fire dooth greatly commend it selfe, whose forme and shape in my opinion doth far surpasse all other fiers whatsoeuer; whose bals being round and all of one equall bignes, when they are all truly placed together, they do much resemble the piles of shot as they ly in a most beautifull manner within the tower of London.

But now to come to our newe and English fiers, such as neither *Germany* nor any other forrain kingdome or country, did euer to my knowledge as yet either vse or inioy, being also more sweete by many degrees (as being wrought vp with mixtures of lesse offence) yea some very pleasing and delicate, and fit for Ladies chamber, and also more profitable (their multiplication being of lesse price by a great deale then seacole it selfe) I wil here first begin with the most profitable and lasting composition of all the rest thareuer I could find, and secondy I will proceede to the sweetest fire, and after that to some other cheape and worse compositions, yet al being such as in the dearth and scarfitie of other fewell may be commendably vsed and spent.

1. The first and principall fire that I will commend vnto you, is a composition of seacole, and small cole, or thorne cole eyther in equall proportion (which will make a reasonable good fire) or els taking only a third part of small cole to your seacole (which maketh the best and most durable fire of all the rest) working them into balls and knitting them with some as is formerlie set down in your seacole bals that haue no other mixture: but if your thorne coles be of the biggest sort you must first bruse them a little vnder your seete, or els they will require some more paines

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Sea-cole sweetened,

in balling them. These thorne-cole with carefull provision may be had in the summer for three halfe pence the bushell, farre vnder the price of seacole, besides the addition of halfe a pecke of lome which giueth some increase to the bulke. Now least smal coles by this meanes should grow to a higher rate, al mē may easily iudge how suddenlie by the planting or pricking in of smal twigs of willow, fallow, alder and such other speedy growing plants, in al such places as may best bee spared and are fittest to increase them, what great store and quantitie of this fuel may be had yeerly, without any feare of scarfitie; so as vnlesse we will be wanting vnto our selues, we shal not need to want this part of our new firing. Also to ease the charge of your smal coles, you may take one parte of earth, and one part of small-cole, and the rest seacole; but this maketh not altogether so bright a fire as the former.

2. The second and sweetest fire of al the rest, but not so lasting as the first, is a mixture of the sawdust of deale or firme boords amongst your seacoles, either in a third, or a moitie, as you did in small cole: vsing stil the first band of lome both in this and al the other compositions following. And the sawdust likewise of elme or oke may bee mixed with seacole and made vp into bals, and this maketh a verie good and sweet fire.

3. Many haue thought my fire to consist of seacole and Cowdunge, and one among the rest hath so aduentured to publish the same, as beeing assured of my composition: but now you may see that rash pens do soone run riot. Yet I do not vtterly dislike this mixture, because it may also haue a place amongst my cole.

and multiplied.

cole-bals: but the matter thereof not being substantial enough to match with a seacole, cannot bring forth so lasting a fire as my first is, and the same hauing also some vse already in the enriching of grounds, can hardly be spared in some places to be consumed into firebals. Yet (to speake truly of it) it maketh a sweete and pleasing fire: and if you bestow labor enough therein you may make colebals, with it and seacole, without any other bande.

4. Some would haue my multiplication to consist of chopt strawe and seacole, but that conceit I hold not to be worth a straw: for what doth sooner consume with fire then stubble and straw, which are apt to catch, but vnapt to continue the flame which possesseth them.

5. The Tanners barks broken and incorporated with seacole, are very like to proue a good fire, but this secret will haue no great extension for want of matter.

6. The remainder of an olde fire may be wrought vp into new bals, or els piled in the midst of a new fire to kindle the bals the sooner, so that in this kind of firing there is no losse of coles at all.

7. How turfe in his own nature may be mixed with seacoles, I haue made no experience: but if the same be first charcoled, no doubt it will make both a sweet and a lasting fire.

8. What the oozes will do either for the multiplying or binding of our colebals, I can not certainly determine, only I haue thought good to mention them, and so leaue them to other mens labors.

The last circumstance which wee are to obserue in this our new fire, is the manner of making the

Seacole sweetened,

same; which though a man without direction might easily aime at, yet seeing I haue bin liberal in the matter, I will not be niggardly in the forme thereof. And therefore for the better placing or piling of these bals, I do first lay bricks edge wise on my hearth one by one, each bricke distant a full inch from the other, according to the breadth or compasse of the fire which I intend to make (these bricks doe both saue the harth from burning, as also are in steed of an iron grate to draw wind to the bals, to make the burn the better:) then do I place a rowe of faucon or saker shot for the neathermost rank (& they which haue no iron bullets, may lay colebals in steed of the) and then an other row of these bals vpon the neathermost, and so I frame my fire to what hight and compas I thinke best; but I haue alwaies vsed to place each ranke in the forme of a semicircle; but within toward the midst of my fire, I conuey a few shorte cleft peeces of a faggot stick, and a few charcoles with them, or charcoles alone, and there I begin to kindle my fire. It may bee this fire will beare an artificial core of stone, brick or iron, wherby the fewer bals may serue the turne: heere euery man wil please himselfe with his owne fancie, and so I leaue him to his best conceite.

These bals may also be mingled among billets and charcole being wisely placed, and though the ashes bee this way lost, yet I doubt not but they wil easily be requited in the sauing of the fire.

And thus I haue discovered the best part of my skil in this new fire of colebals; whose good entertainment may happily one day drawe matters of greater worth from me, tending as wel to the enriching as the strengthening of this little Iland, whose Lady and virgin Queene the great and mighty Iehouah

and multiplied.

uah long maintaine and blesse, with al his heavenly fauors and glorious benedictions, to his honor, hir delight and our comfort.

I hope though the principal scope of this discourse doth only consist in the bettering and altering of lea-cole, yet that I may also with good leaue discouer some profitable aduise in charcole and other fewel, and that no man wil be offended though I teach him how to raise an extraordinary gaine by planting of fire-wood, farre exceeding the vsurers reckoning both in commoditie and lawfulness: yea I am fully perswaded, and that not by reason only, but by the vncontroulable Mstres of al truth, that euery pound laid out in this manner, wil by a natural kind of vsurie at the least treble it selfe within the compas of seuen yeares; which in the second and third returne (besides the yeerely benefit after the first seuen yeares farre exceeding 10. or 20. in the hundreth) is able to giue a good contentment to the most miserable peni-father of this land. The tree which I meane is a willow, whereof one plant in seuen yeares commonly bringeth forth seuen plants, besides other boughes and spray, that may be conuerted into fagots, charcole and small-cole. This kind of husbandry proueth best in most vnprofitable and surrounded groundes, which may best indure a dead rent for seuen yeares, such as were of late plentifully to be found in the ouerflowed fennes of Lincolneshire, wherof Captaine Louel by his skilful and industrious labours hath newlie won 33000. acres, beeing a most memorable and ingenious worke, and wel deseruing hir Maiesties most gracious priuiledge conferred vppon him. I would that Erith marshes had twentie yeeres since

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Seacole sweetened,

met with such a workeman. It may be they haue bin hitherto reserued for my Inning, whereat you shall see me aime vnappily in some of my last lines. But me thinks I am now so farre entred into water-work, that I haue almost quenched the fire which I haue in hand. To returne therefore to our first discourse, I say, that although there shal not bee found sufficient store of such moist ground, whereon to plant whole woods of willowes, yet I doubt not but if the bare and naked banks about all the ditches in Rumney marsh, and all the riuers, brookes, ditches, pooles, and marsh grounds of England besides, were wel replenished with Willowes, Sallowes, &c. but that in a fewe yeares space we might in some good measure supply the woodfals that haue beene committed in fire-wood, and so bring downe the price both of biller, charcole and small cole.

And thus much as a cole-maker: I will now alter my trade, and play the Cooper another while.

A wood-

A wooden vessell being as ser-
uiceable for the boiling of liquors as
anie copper kettle, or other
metalline vessell
whatsoeuer.

Hauē thought good at this time also to
touch my wooden vessell, long since
mentioned in my *Jewell-house*; not be-
cause I would sort it with a fire of mine
owne fancie (as though it could not en-
dure the most vsuall and strongest fires that other me-
talline vessells and kettels are able to beare) but partly
for that (being a matter of new inuention) it doth wel
become this place; but principally, for that within a
terme or two, I purpose (God willing) to make a pub-
like shew thereof to all commers, vnto whom the se-
cret it selfe shall also be reuealed and made good: and
therefore I do here labour to prepare their minds to
a kind and probable conceit therof, least when it shall
be offered to a publike view, it may happily bee taken
for the second part of M. *Venners* Tragedie, late-
ly acted at the Swanne on the banke side, with better
profite to himselfe then pleasure to the beholders.

And because seuerall men haue conceiued seuerall
and strange opinions herein, some expecting a mira-
culous preparation of the wood, some doubting the
durabilitie thereof (of the which sort for the most part
I find the Coppersmiths, who are vnwilling to beleue
anie thing that maketh against their trade and liuing)
others charging the Author, as not hauing hitherto
disclosed anie matter of worth, anie way answerable
to

A wooden vessell

to the glorious titles of his bookes, and so (arguing *re ad personam*) do vutterly condemne this secret with the rest: & some imagining the same both to be possible and durable, but yet so curious, as that simple wits are neuer able to repaire it, being once out of frame: all these, I say, are either in some measure to be satisfied, or els they may well conclude, that I haue hitherto told but a tale of a tub. All which obiections (although I haue els where sufficiently answered) yet once againe I will cursorily runne them ouer; that I may cleere both my selfe and the inuention of all vnjust, malicious, and ignorant calumniationes. And here (not only to relie vpon the graue censure of the right honorable the Lord high Treasurer of England, my good Lord and master, who vouchsafed me his honourable presence at my house, when both my fire, tub, portable pumpe, and boulting hutch were made readie for his comming; whose good approbation only is able to counterpoise and ouerwey the shallow and light conceits of all my aduersaries) to the first I answer, that my defence is meereley naturall, and not drawne from that chargeable and incombustible oyle of *Talcum*, fitter to bee thinly laid vpon the face of a Ladie, then grossly spent or dawbed vpon the sides of a wooden vessel, nor yet from the haire of a Salamander, whose bodies are rare and hard to come by. Yea it is such, as vpon the discouerie wil proue so easie and familiar, as that I feare the beholders will rather condemne their owne weaknesse, then wonder at my inuention, and yet the same both royally and really performed.

And as for the durabilitie thereof, I will make this warrant to all that shall haue cause to vse it, that how long

to boile liquor in.

long soeuer anie wooden vessel wil last that is continually employed about cold water, the same shal endure as long, though in the like maner exercised in the heating or boiling of liquor. And so I dare boldly conclude, as sometimes heretofore I haue done, that if my wooden Salamander were not more endangered by the element of water, then it is by the element of fire, we should not need new vessels but for new ages.

The third sort of canilliers, because they shew themselves to be only carping Sophisters, & no sound logicians, as arguing from the matter to the person, & syllogizing vpon particulars, *in hoc & in illo errauit, Ergo in omnibus*. I hold them scarcely worth the answering: and yet because I wil haue no aduantage taken of my silence, though I might answer them, as others haue done before me to the like: *Carpere vel noli nostra, releda tua*. Yet least that great and costly Mill in Ironmonger lane, where the horses trampling vpon a moueable floore, did euen with feare and trembling spend and wast their spirits: or that monstrous timber flore that should haue blown vp & disperfed the Spanish squadrons, but now lieth rotting in his own ruins not worth either the time or timber that was consumed in it, together with some other martiall engines, whereof there hath bin a great and long expectation without anie good & seruiceable vse made of them, (so as hitherto they do nothing els but *ludere liantem corium*) I say, least these & a few other of the like kind and qualitie, should in the gulf of disgrace drowne all the credit & future hope of other Artists; that there are already, both by my selfe and other English-men, manie new, excellent, & most profitable deuises both by writing, and otherwise made knowne to the world:

D

where-

A wooden vessell

whereof some are not sufficiently as yet vnderstood, most of them not regarded, and in a manner all of them, either not at all, or verie slenderly rewarded: I meane not with pension, for that were chargeable, nor with fauours, because they are not vsual, but with thanks, which is the basest recompence that Arte may looke for. But you require some instances of particulars at my hands, what say you then to such a cariage for a cannon, whereby the peece with the helpe of two men only may be turned, mastered, and charged at pleasure in as good sort as ten men are able to doe at sea with their vsual cariages? What thinke you of a portable boate, which one man may carie with ease, and yet wil hold eight persons? And of a light, strong & sodaine bridge to be made by vniting these boates, and thereby sodainly to conuey euen a whole armie ouer a large riuer? What if an inuention be shewed how a seruiceable vessel may chace with ten or twelue great peeces of ordinance as readily, and as aptly, as now any ship doth with two or with foure peeces only? What if such new kind of sailes be deuised, as shal verie neere double the way which anie ship now maketh? Nay, what if such a Pinnesse were warranted to be made, as should vpon her owne motion, without the helpe of any mariner to direct her, make a speedy way against all wind and weather vpon the seas for one halfe mile at the least, and being laden with all kind of shot and fire-worke, vpon the first touch of any other vessel, shal presently giue fire to a traine, and so spend her selfe, and endanger such ships as are then next vnto her? And what would you say to a peece of ordinance which one man may sufficiently manage, and yet twentie of them shal make six hundred Muskettiers

kettiers to abandon the field? But to conclude these warlike inuentions with a shot of the highest execution both for land & sea. What if a bullet bee deliuered that shal breake into a thousand parts, each part carying both his fire, powder & shot with it, so as no garison vnder the wals of any warlike towne or citie, no band of souldiers lying in the safest trenches they can deuise to make, can possibly be free from the furie of this bullet: which because it may be shot compasse at anie reasonable distance, must needes force them to forsake their ground.

Some of these new inuentions the Author hath already shewed to diuers of his honorable and priuate friends, and the rest vpon reasonable reward shall bee made good for any publike seruice; I could wish that some profitable vse of this Gentlemans wit were presently made whilest God doth spare him on earth amongst vs; for I feare, when death hath depriued vs of this worthie Inginer, he wil scarcely leaue any true successeur of his skil behind him.

In this military kind of knowledge, if I should not acknowledge mine own weaknes, it wold easily discouer it selfe: & yet I dare holdly say, that omitting many other secrets of good vse, faithfully & familiarly described for the benefit of the reader in my books already published, y my new & late discouery in Peter-works being the true foundation and groundwork of the last letters patents granted for the same; as it bringeth in yearly & freely many 100. pounds to the Patētees (my self not hauing receiued one half yeres profit for the inuention) so it hath also eased the countrey of manie cariages, wherewith (by the ignorance of some Peter-men in former times and yet to this day by the wil-

fulnesse

filnesse of others; it hath bene and is now and then most grievously oppressed, whereof it may be ere long I wil find some sufficient reliefe in a strange maner.

But if the new (though natural) grounds of husbandry were first wel understood, and after truly and painfully practised according to my printed directions; (leaving the conceit of digging and setting in a gentle slumber for a while) I would not doubt but that both for plentie of grasse and corne this last age of ours wold far surpass the dayes of al our ancestors (excepting the golden age of Saturne only) & yeeld sufficient store of corne both for our selues & some of our neighbour countries. And this can two English Gentlemen of my knowledge yet aliue sufficiently proue by their owne experience to be true, who haue assured me that for diuers of these latter yeares, they haue in a maner doubled the vsual yeeld of an acre, and that by plowing and sowing only; al the enriching thereof not exceeding the charge of three shillings vpon an acre, toward which they haue also yeerlie saued the third parte of their seede corne; euery corne for the most part branching it self into 10. 15. & 20. stalks and eares both large & full of graine: yea the colour and greatnes of the stalke and eare hath bin such, as in haruest time their corne (though one of their parts lay altogether in a common field) was easily discerned from al other mens that enuironed the same. And where grasse without excessiue charge would neuer exceed twelue inches in height before, with the charge of foure shillings bestowed vpon an acre, for foure yeares together there hath grasse grown knee deepe and very plentiful.

I had almoste forgotten the winning of Earthe marshes

marshes, whereby also the breach made by a Cannon in the time of any siege though of five or six yarden in height and of twenty or thirty in breadth, is presently repaired and made sufficiently defensible against the enemy. And had the counsel of some men that I could name taken place in that unfortunate voyage of Lisbon, whereby they had carried but the outside of this secret with them, they might have found lining enough to have raised a fort even upon the sands, and suddenly have planted the cannon that should have commanded the town itself. For so was the *Golletto* won by the Turke: a fort otherwise impregnable, whereby that honorable and glorious victorie of don Iohn de *Austria* obtained against the Turke by sea, was mightily eclipsed by a miserable overthrow at the same time given to the Christians by land. Heere wee shall neither have neede of nailes or timber, stones or mortar, but linnen cloth & needles to make our strong defence either against the furie of the cannon or the scourges of the sea, the whole art wherof consisteth in bags or sacks of linnen to be filled upon any present occasion either with sand or earth; and these to be suddenly layd or sunke upon any cause of service or irruption of waters. And though all the dutch marsh-men have hitherto pulled themselves about the innig and winning of the foresaid breach, and have given it over as impossible to be won at the Thames mouth (because they find it in some parte to be nine or tenne foote in depth underneath the low water-marke, before they come to any firme ground) yet I doubt not but by sinking of sacks of earth the workeman shall soone find or make

A wooden vessell

a foundation sufficient to beare a strong marsh-wal ; which may also consist of sacks of earth worke-manly placed, and after wel backed; which before the sacks be throughlie rotten wil closely couch and knit together, and likewise be so fronted and filled vp with ooze, as that in a short time you shal haue a firme and substantial marsh-wal against al wind and weather whatsoeuer. There are also some other new and warlike vses of linnen cloth, which may bee reserued for some better occasions then (thanks bee to God) these times doe as yet require: out of which and some others which I haue partly seene, and partly heard of, I dare boldly conclude, that the most valiant armie of the best approoued soldiers, (yea though consisting of louers themselues, and that giuing battaile in the presence of their Ladies and Mistresses) may easily euen with a smal band of ingenious scholars and Artists be vtterly ouerthrown & vanquished. And therefore O happie and thrice happie are those wits, (but most infinitely happie are those kingdoms and countries which inioy them) who haue drawne and deriued their knowledge from the greate God of nature, from the firmament, from the foure elements, from the great Anatomie and from the little world, and the rest of those vnwritten books, whereof *Paracelsus* in his Labyrinth maketh a large and learned discourse.

The last and least obiection, will be sufficiently refuted vpon the bare sight and view of the vessel, and I make no question but that al the Coopers in England wil be my sureties in this behalfe, vnto whom I doe freely resigne the gaines of my wooden tub for
their

to boile liquor in.

their general counterband, & so I do leaue both them
and the rest of my contrimen in a wooden expectation
for a while.

*Nec omnes, nec omnia mihi placuere,
cur ego omnibus.*

H. P.

FINIS.



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